

Figure 1
Scheme For The Synthesis Of N-Methyl Piperazine

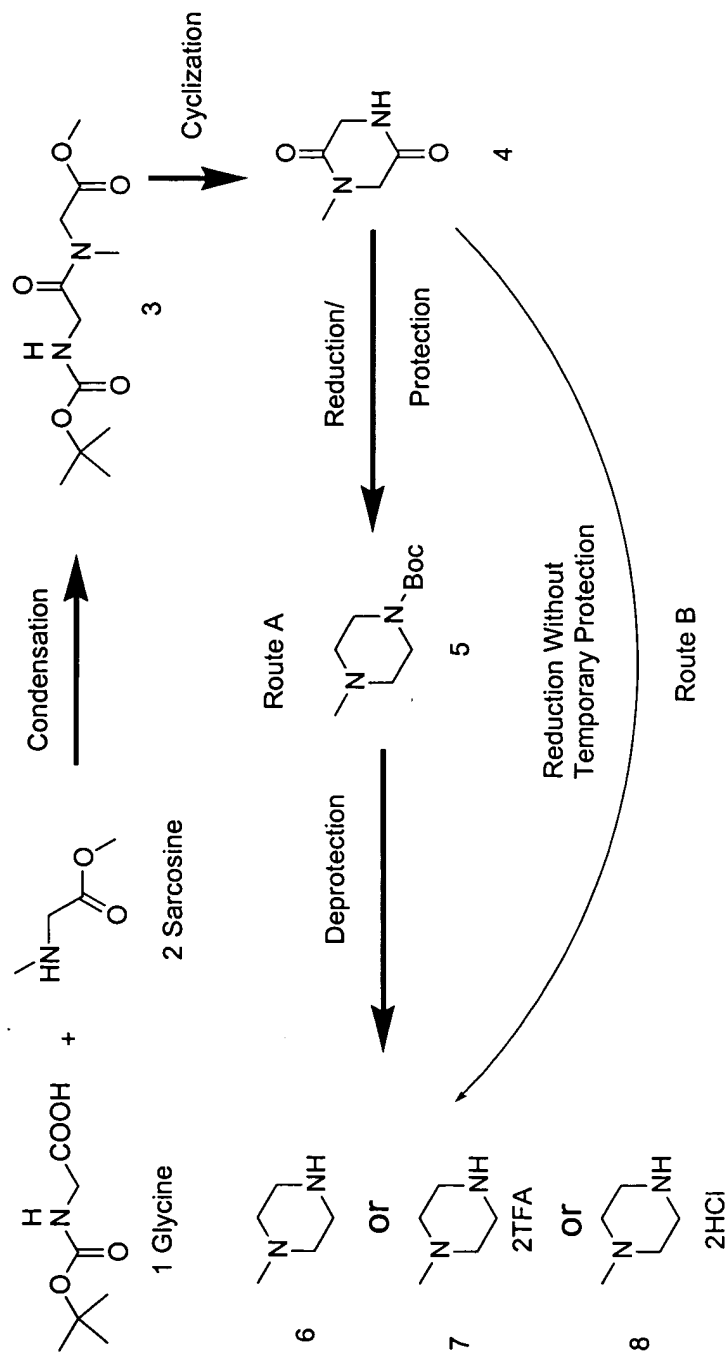


Figure 2A

Scheme A For The Synthesis Of N-Methyl Piperazine Acetic Acids

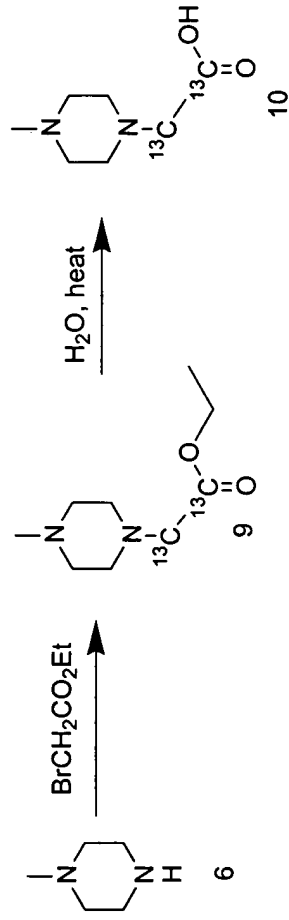


Figure 2B

Scheme B For The Synthesis Of N-Methyl Piperazine Acetic Acids

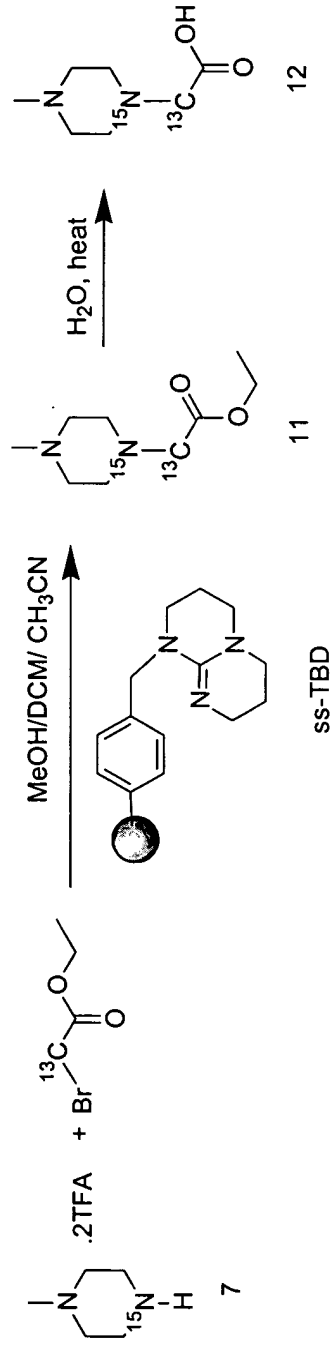


Figure 2C

Scheme C For The Synthesis Of N-Methyl Piperazine Acetic Acids

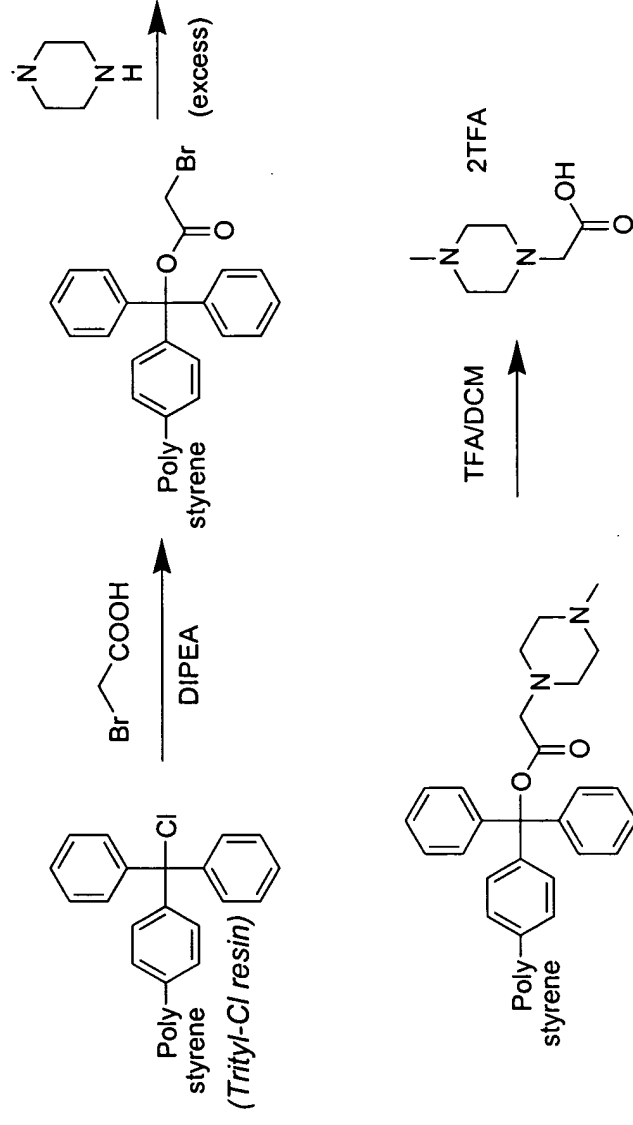


Figure 3A

Scheme A For The Synthesis Of ^{18}O Labeled N-Methyl Piperazine Acetic Acids

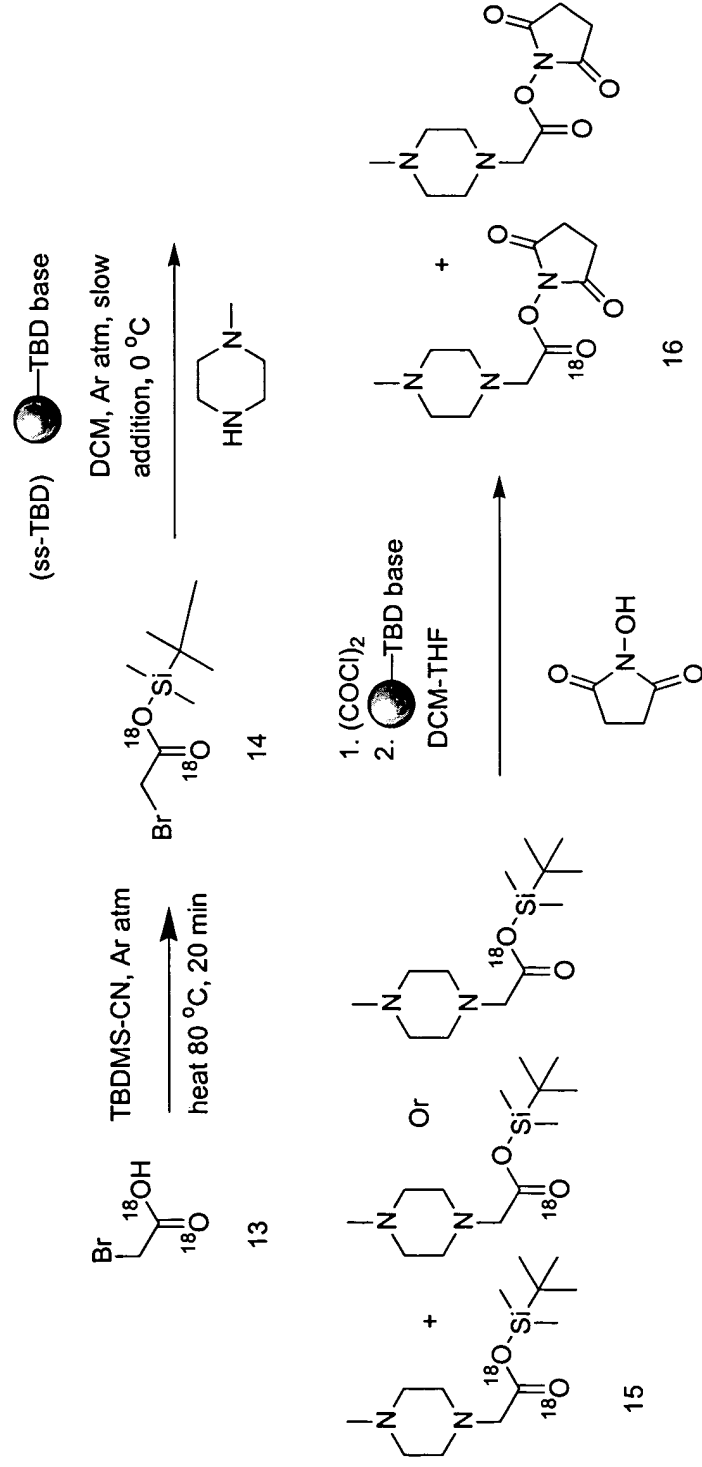


Figure 3B

Scheme B For The Synthesis Of ^{18}O Labeled N-Methyl Piperazine Acetic Acids

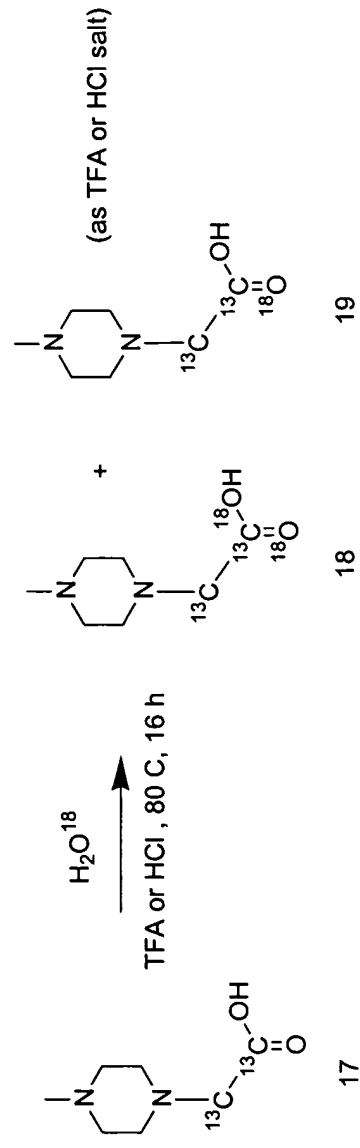


Figure 4A

Scheme A For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Imidazolid Formation

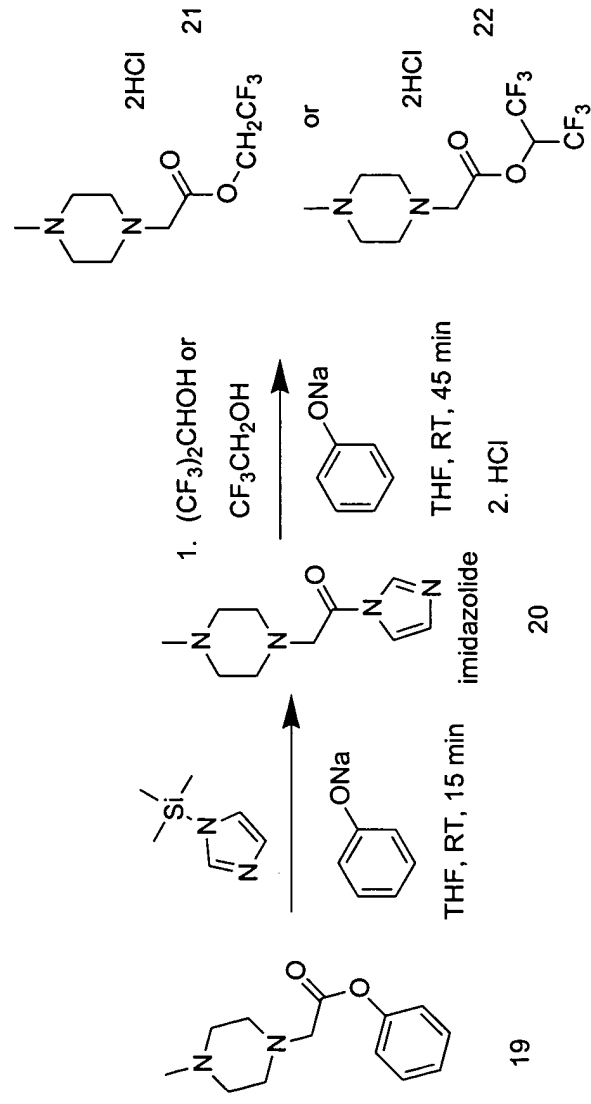


Figure 4B

Scheme B For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Oxallyl Chloride

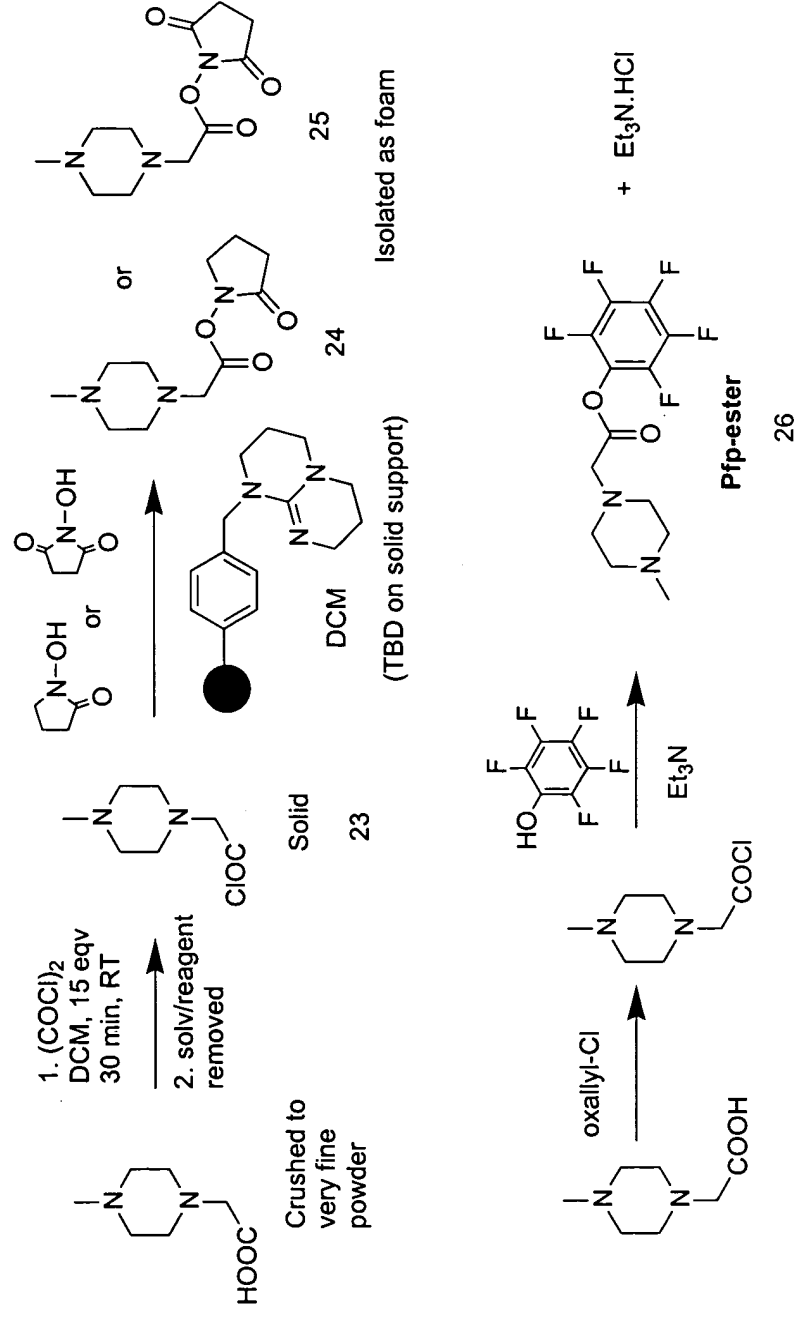


Figure 4C

Scheme C For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Trifluoroacetate Ester

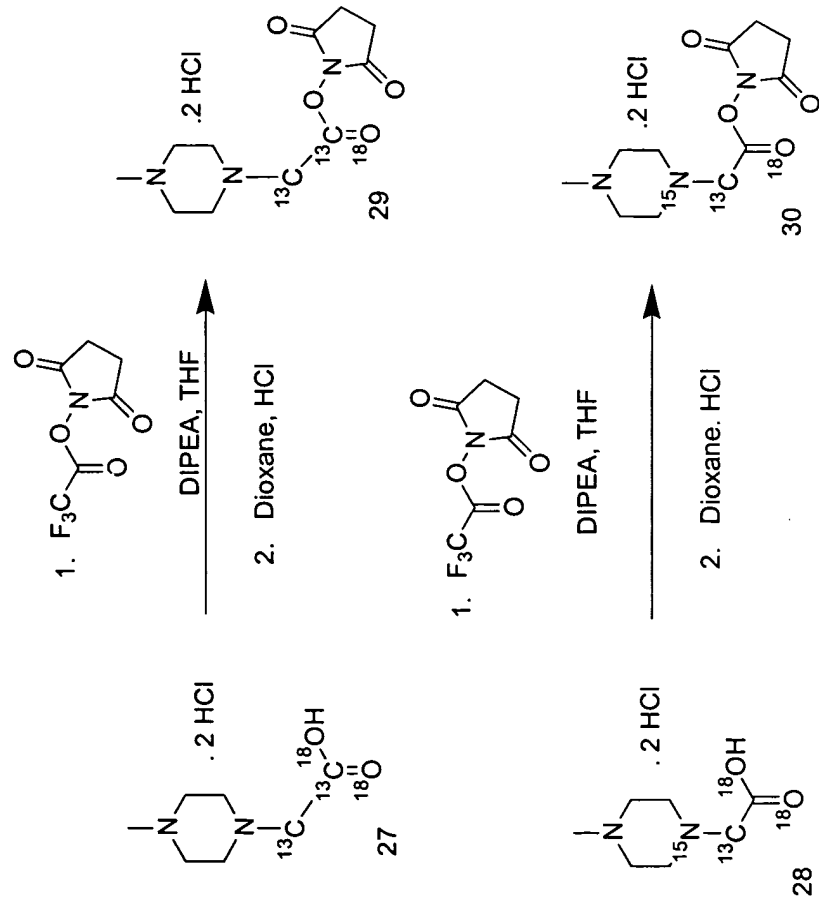
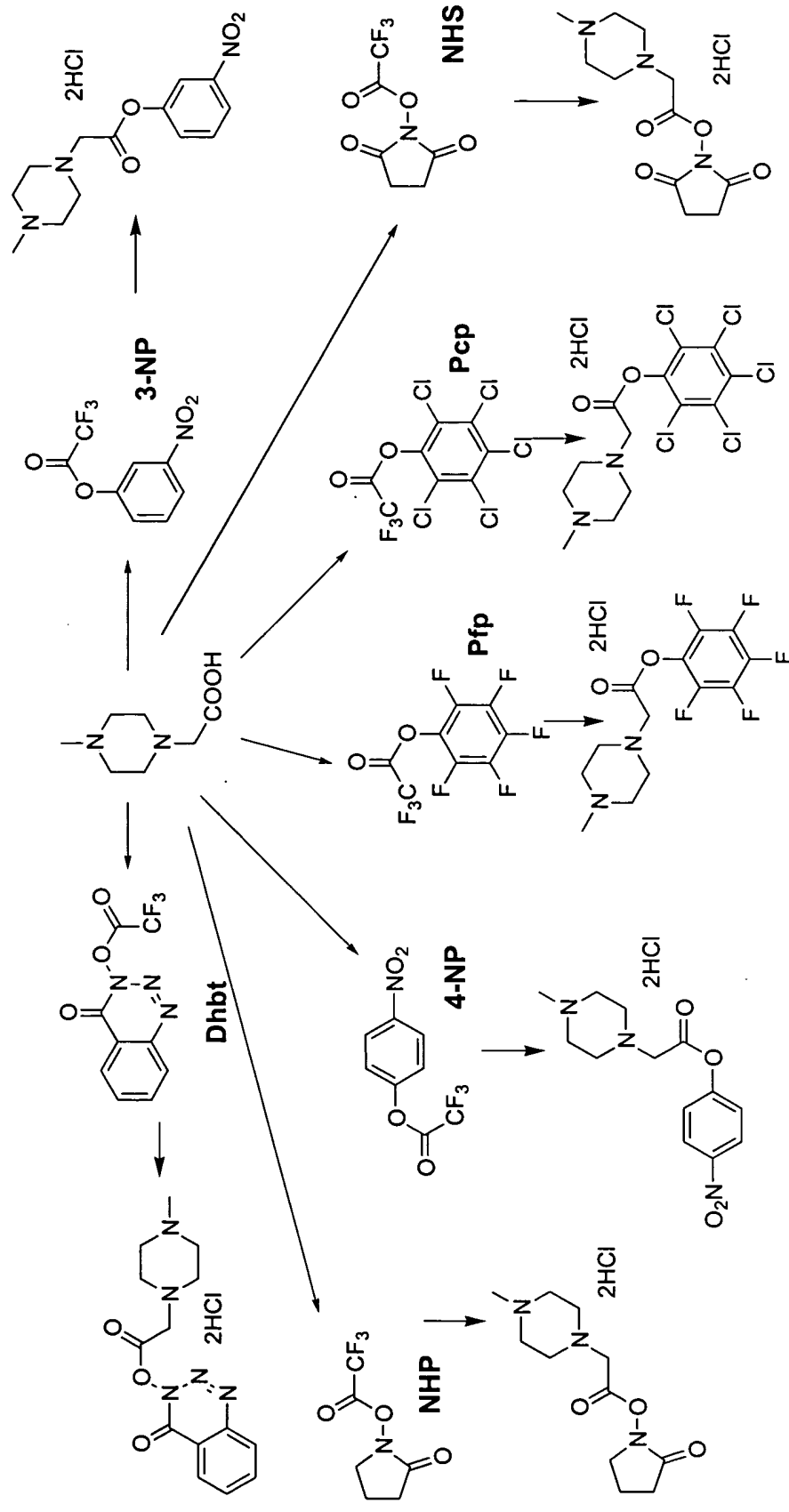


Figure 4D

Scheme For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Trifluoroacetate Esters

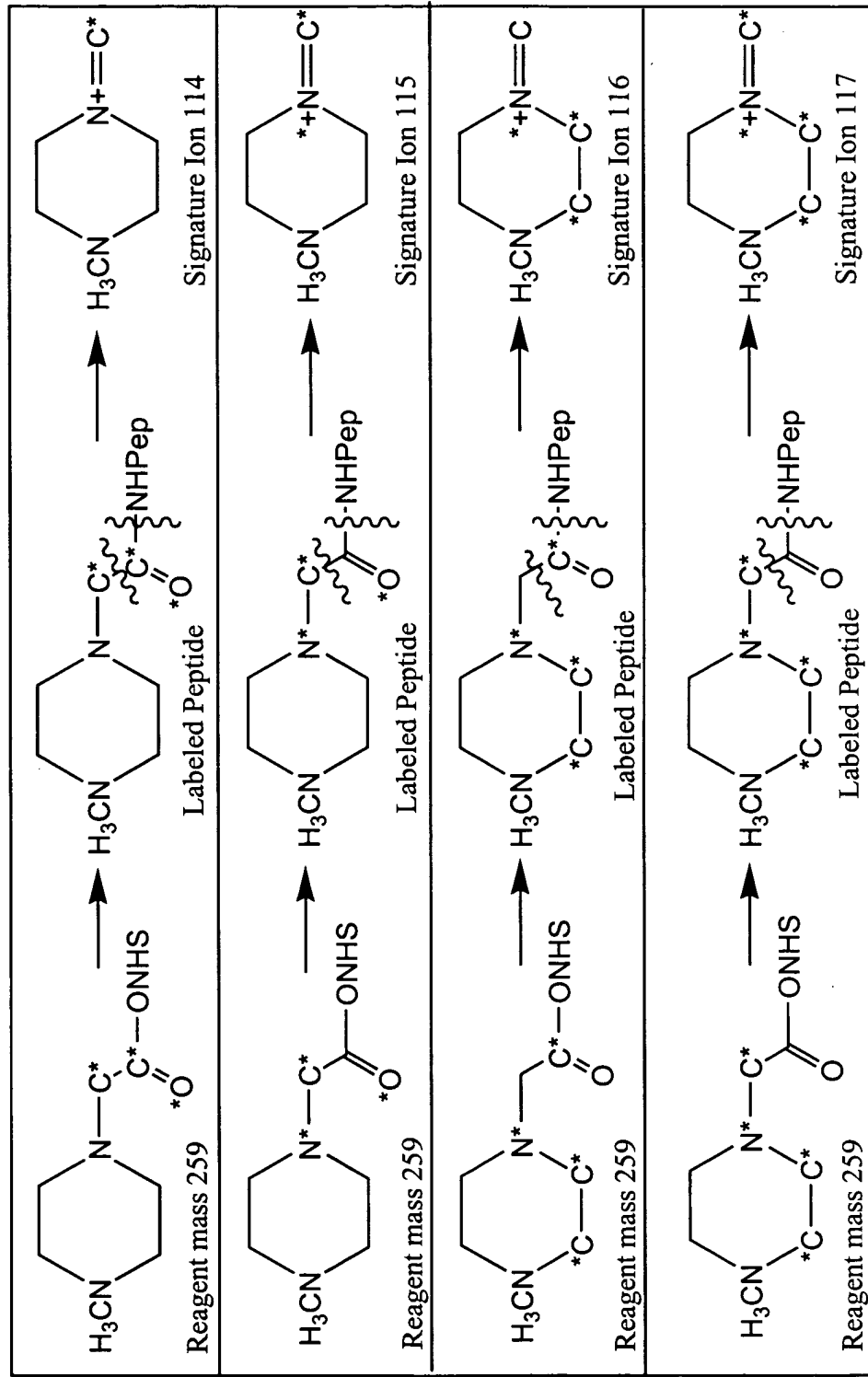


2

~~CN1CCCCC1~~ H_2^{15}N
$$\text{H}_2^{15}\text{N}-^{13}\text{C}-\text{C}(=\text{O})-\text{OH}$$

Figure 5B

Fragmentation of the Isobaric Label Set



NHS = N-hydroxysuccinimide

{} = Fragmentation Point

Stars indicate "heavy" isotopes

N* = ¹⁵N; C* = ¹³C; O* = ¹⁸O

Pep = peptide